

Instructions

- This folder contains program codes and procedure files to compute the information matrix tests (IMTs) suggested by Cho and White (2011).
- The model assumption for this folder is Weibull duration model in Cho and White (2010). That is, the conditional density of duration data $Y_t \in \mathbb{R}^+$ given explanatory variables $\mathbf{X}_t \in \mathbb{R}^k$ is specified as

$$f(y|\mathbf{X}_t; \delta, \boldsymbol{\beta}, \gamma) = \delta \gamma \exp(\mathbf{X}_t' \boldsymbol{\beta}) y^{\gamma-1} \exp(-\delta \exp(\mathbf{X}_t' \boldsymbol{\beta}) y^\gamma),$$

where $(\delta, \boldsymbol{\beta}, \gamma)$ is an element of a parameter space.

- You need GAUSS engine and CML sub-routine to compute the IMTs.
- To run the program, the following steps need to be taken:
 1. Unzip **linwei.zip**;
 2. Open **linear_wei.prg**;
 3. Follow the instructions in the program file.
- Cautions:
 1. Dataset has to be defined in the form of $n \times k$ matrix such that the first column contains the realizations of dependent variable, and the other columns contain the realizations of independent variables, where n is the sample-size, and k is the number of explanatory variables. The intercept term *cannot* be one of the independent variables.
 2. "bbb" stands for the number of bootstrapping. You can choose your preferred number for "bbb."
 3. Parameter space hasn't been constrained in this program.

Reference

- Cho, J.S. and White, H. (2010): "Testing for Unobserved Heterogeneity in Exponential and Weibull Duration Models" *Journal of Econometrics*, 157, 458~480.
- Cho, J.S. and White, H. (2011): "Testing the Equality of Two Positive-Definite Matrices with Application to Information Matrix Testing," Discussion Paper, School of Economics, Yonsei University.